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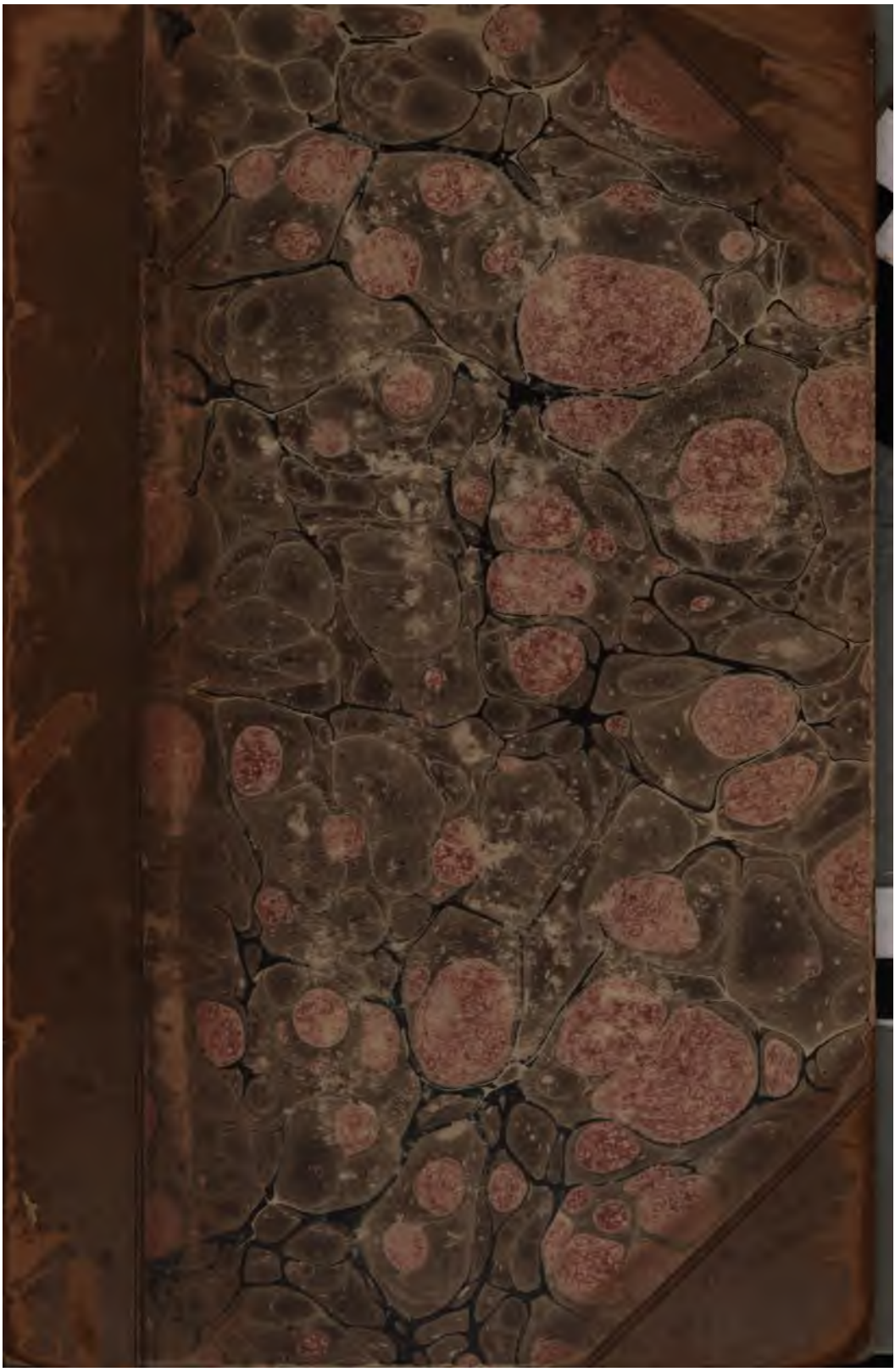

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MEMOIR,

ETC. ETC.

M. 1831.

MEMOIR

OF THE

LIFE

OF

THOMAS YOUNG, M.D. F.R.S.

FOREIGN ASSOCIATE OF THE ROYAL INSTITUTE OF FRANCE,
ETC. ETC.

WITH

A CATALOGUE

OF HIS

WORKS AND ESSAYS.

LONDON:

JOHN & ARTHUR ARCH, CORNHILL.

MDCCCXXXI.

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MEMOIR,

&c. &c.

THE following slight Memoir of the Life of the late Dr. Young was drawn up, from some short memoranda of his own writing in the possession of a near connexion, by one who had the advantage of long and intimate acquaintance with that distinguished scholar and philosopher; but who, never having been engaged in the pursuits of accurate science, feels himself incompetent to give more than an imperfect sketch, which he trusts to see filled up hereafter by an abler hand.

Dr. Thomas Young, a man eminently distinguished in more departments of literature and science than any other individual of his age and country, was born at Milverton in Somersetshire, the 13th of June, 1773. He was the eldest of ten children of Mr. Thomas Young of that place, and his mother was a niece of Doctor Richard Brocklesby, a physician of eminence in the metro-

polis, who was well known both from his connexion with the first literary societies, and with the highest political circles of the times in which he lived.

His parents were both of them of the society of Quakers, and of the strictest of a sect, whose fundamental principle it is, that the perception of what is right or wrong, to its minutest ramifications, is to be looked for in the immediate influence of a Supreme intelligence, and that therefore the individual is to act upon this, lead where it may, and compromise nothing. To the bent of these early impressions he was accustomed in after-life to attribute, in some degree, the power he so eminently possessed of an imperturbable resolution to effect any object on which he was engaged, which he brought to bear on every thing he undertook, and by which he was enabled to work out his own education almost from infancy, with little comparative assistance or direction from others.

From a very early period Dr. Young was chiefly an inmate in the family of his maternal grand-father, Mr. Robert Davies, of Minehead; a gentleman who amidst mercantile avocations, though no very deep or accurate scholar, had culti-

vated a taste for classical literature, which it was his earnest endeavour to impress upon the mind of his grandson. It is stated that whilst domesticated with him, he had learnt to read with fluency when he was two years old, and that soon after this, in the intervals of his attendance on a village schoolmistress, he was made to commit to memory a number of English poems, and even some Latin ones, the words of which he retained without difficulty, although at the time unacquainted with their meaning.

Before he was six years old, he attended the seminary of a dissenting minister, and went afterwards to a school at Bristol, where he remained about a year and a half, and where the deficiency of the instructor appears to have advanced the studies of the pupil, as he here first became his own teacher, and had by himself studied the last pages of the books used, before he had reached the middle under the eye of the master.

His father had a neighbour, a man of great ingenuity, by profession a land surveyor and land steward; and in his office, during his holidays, he was indulged with the use of mathematical and philosophical instruments, together with the perusal of three volumes of a Dictionary

of Arts and Sciences, which he also found there. These were to him sources of instruction and delight of which he seemed never to weary, and which, thus accidentally thrown in his way, had probably no small influence on the issues of his future life.

In 1782, he was sent to the school of a Mr. Thompson, at Compton, in Dorsetshire, of whom he was always accustomed to speak with great respect, as a person of an enlarged and liberal mind; and who, possessed of a moderate and miscellaneous library, permitted and encouraged his scholars to turn it to their profit; the principle which he adopted in the course of his instructions, being to allow them a certain degree of discretion in the employment of their time.

Here Young went through the ordinary course of Greek and Latin Classics, together with the elementary parts of the Mathematics; and by rising earlier and sitting up later than his companions, with the assistance of a schoolfellow who had some French and Italian books, he rendered himself tolerably familiar with those languages. He had acquired, in his visits to his father's neighbour, the art of land surveying, and the amusement of his walks was to measure heights with a quadrant.

The next study he undertook was Botany, and for the sake of examining the plants which he gathered, he attempted the construction of a microscope from the descriptions of Benjamin Martin. This led him to Optics; but in order to make his microscope, he found it necessary to procure a lathe. Every thing then gave way to a passion for turning, and science was forgotten for the acquirement of manual dexterity; until falling upon a demonstration in Martin which exhibited some fluxional symbols, he was never satisfied till he had read and mastered a short introduction to the doctrine of Fluxions.

Mr. Thompson had left in his way a Hebrew Bible. He began by enabling himself to read a few chapters, and was soon absorbed in the study of the principal Oriental languages. At the age of fourteen, when he quitted Mr. Thompson's school, he was thus more or less versed in Greek, Latin, French, Italian, Hebrew, Persic, and Arabic; and in forming the characters of those languages, he had already acquired much of the beauty and accuracy of penmanship which was afterwards so remarkable in his copies of Greek compositions, as well as of those subjects connected with the literature of ancient Egypt.

In 1787, the friends of Dr. Young were beginning to think seriously of the line in life which might be most advantageously taken by a youth of such extraordinary promise. When at the house of one of his relations he accidentally met a connexion of Mr. David Barclay, of Youngsbury, in Hertfordshire, who was then wishing to form an arrangement for the education of his grandson, and through the intervention of Sir William Watson, it was agreed that Dr. Young and the grandson of Mr. Barclay should pursue their studies together, under a private tutor, in Mr. Barclay's house. The tutor who was engaged, found a situation of greater permanence, and never came; so that two boys being left together, whose ages differed only about a year and a half, Young, then little more than fourteen, took upon himself, provisionally, the office of preceptor. They were afterwards joined by a gentleman who was then in progress of perfecting himself in the higher branches of classical attainment, of somewhat maturer years, and who has since been known to the world as the author of the "Calligraphia Græca." But Dr. Young did not relinquish the task which he had previously undertaken, and already far advanced beyond the limits of ordi-

nary scholastic attainment, was the principal director of the studies of the whole party.

When about the age of fourteen, he was attacked by symptoms of what was feared to be incipient consumption. But under the attendance of his uncle Dr. Brocklesby, and Baron Dimsdale, he recovered his health, without suffering any ultimate inconvenience, and was enabled for the most part, to pursue his labours through the whole duration of his indisposition, merely relieving his attention by what, to him, stood in the place of repose—a course of Greek reading in such authors as amused the weariness of his confinement.

In the five years between 1787 and 1792, residing during the summers in Hertfordshire, and for some months of the winter in London, with no other assistance than that of a few occasional masters in the latter place, he had rendered himself singularly familiar with the great poets and philosophers of antiquity, keeping ample notes of his daily studies. Of the various and conflicting opinions of the ancient philosophers he had drawn up a most admirable analysis; and as his reading was not merely the gaining words and phrases, and the minuter distinctions of dialects,

but was invariably also directed to what was the end and object of the works he laboured through, it is probable that the train of thought into which he was led in this analysis, was not without its effect, in somewhat mitigating his attachment to the peculiar views of the sect amongst whom he had been born.

He had acquired a great facility in writing Latin. He composed Greek verses which stood the test of the criticism of the first scholars of the day, and read a good deal of the higher mathematics. His amusements were the studies of botany and zoology, and to entomology in particular he at that time gave great attention.

In the winters of 1790 and 1791, having prepared himself by previous reading, he attended the lectures of Dr. Higgins in chemistry, and began to make some simple experiments of his own on a small scale. But he was afterwards accustomed to say, that at no period of his life was he particularly fond of repeating experiments, or even of very frequently attempting to originate new ones; considering that, however necessary to the advancement of science, they demanded a great sacrifice of time, and that when the fact was once established, that time was better employed

in considering the purposes to which it might be applied, or the principles which it might tend to elucidate.

His uncle Dr. Brocklesby had at this time desired to receive from him a regular report of his literary and scientific pursuits, intending to take upon himself the supervision of his further education for the practice of physic, which was the line he recommended him to adopt; and having communicated some of his Greek translations to Mr. Burke and Mr. Windham, with both of whom Dr. Brocklesby had lived in intimacy, an acquaintance with these two distinguished persons ensued; in the course of which, Mr. Burke was so greatly struck with the reach of his talents and the extent of his acquirements, more particularly by his great and accurate knowledge of the Greek language, that Dr. Young may be considered as in no small degree indebted to the good offices of that eminent statesman, for the extent of interest which his uncle took from this period in his future settlement in life.

It may probably be considered that it was in these years that his character received its developement. He was never known to relax in any object which he had once undertaken. During the

whole term of these five years, he never was seen by any one, on any occasion, to be ruffled in his temper. Whatever he determined on, he did. He had little faith in any peculiar aptitude being implanted by nature for any given pursuits. His favourite maxim was, that whatever one man had done, another might do; that the original difference between human intellects was much less than it was generally supposed to be; that strenuous and persevering attention would accomplish almost any thing; and at this season, in the confidence of youth and consciousness of his own powers, he considered nothing which had been compassed by others beyond his reach to achieve, nor was there any thing which he thought worthy to be attempted, which he was not resolved to master.

This self-conducted education, in the privacy of a singularly regular family, was not however without its disadvantages. The acquisitions he was thus making in seclusion were great, but he was not in the way of gaining that which is acquired insensibly in the conflict of equals in the commerce of the world—the facility of communicating knowledge in the form that shall be most immediately comprehended by others, and the tact in putting it

forth, that shall render its value immediately appreciated.

It was in 1791 that he made his first communications to the press, through the Monthly Review and the Gentleman's Magazine, being Greek criticism, chemical theories, and remarks on botany and entomology.

Towards the end of 1792, Dr. Young established himself in lodgings in Westminster, in which he resided about two years, for the purpose of pursuing his medical studies, attending the lectures of Baillie and Cruickshank in the Hunterian school of anatomy; and he was during that period amongst the most diligent of the pupils of St. Bartholomew's Hospital.

In 1793, he made a tour in the west of England, principally with a view of studying the mineralogy of Cornwall; and about this time having been introduced to the acquaintance of Charles Duke of Richmond, who had long been a friend of his uncle's, and was then Master-General of the Ordnance, he was offered by his Grace the situation of assistant-secretary in his house. He felt that this was an opportunity for entering into public life which might lead to advantage and distinction. Mr. Burke and Mr. Windham recommended him

rather to proceed to Cambridge and study the law; but after some consideration of these conflicting proposals, he determined to adhere to the pursuits of science, and to proceed to the practice of physic, as most congenial both to his predilections and his habits, and to which the position occupied by his uncle appeared to offer a natural introduction.

In this year he gave to the Royal Society his Observations on Vision, and his Theory of the Muscularity of the Crystalline Lens of the Eye, which became the subject of much discussion, and John Hunter immediately laid claim to having previously made the discovery. Dr. Young was soon afterwards elected a Fellow of the Royal Society, when he had just completed his twenty-first year.

In the autumn of 1794 he went to Edinburgh, and there attended the lectures of Doctors Black, Munro, and Gregory. He pursued every branch of study in that university with his accustomed intensity, but made the physical sciences more peculiarly the objects of his research. He now separated himself from the Society of Quakers, and amidst his medical, scientific, and classical labours, he determined on cultivating some of those arts in which he considered that his early education

had left him deficient. But every thing, be its nature what it might, was with him a science; whatever he followed, he followed scientifically. He was extremely fond of music, and of the science of music he rendered himself a master. He had at all times great personal activity, and in youth he delighted in its exercise. But perhaps it may provoke a smile, though too characteristic an anecdote to omit, that in instructing himself in the figure of a minuet, he made it the subject of a mathematical diagram.

Towards the close of 1795 he went to the university of Gottingen, where he took his doctor's degree. His extraordinary attainments, and the almost incredible industry with which he pursued his studies in all their variety, excited the wonder of the laborious school in which he had now placed himself. He found their academical library peculiarly rich in works of reference; and in composing his inaugural dissertation, "De Corporis Humani Viribus Conservatricibus," he left few volumes unconsulted which had any connexion with the subject on which he was treating.

In all periods of his life Dr. Young was entirely exempt from those dissipations into which young persons unhappily very generally fall, and here, as

at Edinburgh, he diversified his graver studies by cultivating skill in bodily exercises. He took lessons in horsemanship, in which he always had great pleasure, and practised under various masters all sorts of feats of personal agility, in which he excelled to an extraordinary degree.

The victories of the French at this time prevented him from visiting Italy, which he had intended to do previously to his return to England; and unwilling to be deficient in any species of knowledge, he proceeded to Dresden; where he spent some time for the purpose of studying the works of Italian art in the galleries of that city, and to compare what he saw with that which he had learnt of them from the Lectures of the professors of Gottingen. Before returning home, he completed his stay on the Continent by a short visit to Berlin.

Dr. Young, during his residence in Germany, had gained a very general and accurate acquaintance with the language and literature of that country, which he kept up throughout his life; but he remarked that he found in Germany a love of new inventions, singularly, and somewhat pedantically, combined with the habit of systematizing older ones, and giving an importance to things in themselves trifling, which in his

case rather confirmed an original habit of dwelling on minutiæ more than his subsequent experience led him to think was advantageous.

In consequence of some new regulations of the College of Physicians, which had taken place during his residence abroad, he found himself precluded from immediately practising as a licentiate in London; he therefore entered himself as a fellow-commoner in Emanuel College, Cambridge, of which Dr. Farmer was then master, who was an intimate friend of his uncle's. He here proceeded to take his regular degrees in physic in that university, pursuing, during his residence, the various studies in which he was engaged; but finding no rival in the variety of his knowledge, and few competitors in most of its branches, he lived with those most highly gifted, discussing subjects of science with the professors, but not attending any of the public lectures, considering that they were in their nature intended for a junior class of students, and relating to branches of knowledge with which he had already made himself acquainted.

Dr. Brocklesby died in December 1797, when the larger part of his fortune was inherited by his nephew, Mr. Beeby; the remainder, with his

house, his books, and his pictures, was left to Dr. Young. He now found himself in circumstances of independence, surrounded by a circle of academical friends and associates, and formed many friendships in distinguished and highly cultivated society, which he continued to prize and to enjoy through life.

He had, during his residence at Cambridge, given some papers to the Royal Society, and had amused himself by contributing several essays on philosophical and other subjects to some periodical publications; a part of these he afterwards reprinted, but considered others of a lighter texture than would bear the criticism of severer experience.

When his necessary residence at college was completed, Dr. Young settled himself as a physician in London, in Welbeck-street, where he continued to reside during twenty-five years. It was not long, however, before he accepted the situation of Professor of Natural Philosophy in the Royal Institution, where he was for two years colleague as lecturer with Sir Humphrey Davy. The first volume of the Journals of the Royal Institution and a part of the second were edited, and for the most part composed by him. He gave two

Bakerian lectures on the subjects of Light and Colours to the Royal Society, and in 1802 he published a Syllabus of a Course of Lectures on Natural and Experimental Philosophy, with mathematical demonstrations of the most important theorems in mechanics and optics; and containing the first publication of his discovery of the general law of the Interference of Light, being the application of a principle which has since been universally appreciated as one of the greatest discoveries since the time of Newton, and which has subsequently changed the whole face of Optical science.

As a lecturer at the Royal Institution, Dr. Young was apt, in no small degree, to pass the capacities of his audience, who at this conjuncture were led to their attendance more as a matter of fashion, than from a love of research, and who for the most part had little previous knowledge. His style was compressed and laconic; he went into the depths of science, and indeed gave more matter than it would perhaps have been possible for persons really scientific to have followed at the moment without considerable difficulty.

In the summer of 1802 Dr. Young accompanied the present Duke of Richmond and his brother,

Lord George Lennox, in his medical capacity, to Rouen in Normandy, with their tutor, Mr. Vincent; and in an excursion from thence to Paris, was first present at the discussions of the National Institute of France, at that time attended by Napoleon; where he made the acquaintance of several leading members of that distinguished body, into which he himself was eventually elected. On his return he was constituted foreign secretary to the Royal Society, an office which he held during life, being long their senior officer, and always one of the leading and most efficient members of their council.

In 1804, Dr. Young married Miss Eliza Maxwell, daughter of James Primrose Maxwell, Esq., of Cavendish-square, who has lived to lament his loss, after an union which was attended with uninterrupted happiness.

At this time he resigned his office as lecturer to the Royal Institution, it being thought by his friends that his holding it longer would be likely to interfere with his success as a medical practitioner. This view, as regarding his continuance in a situation which would appear to the public to be anomalous to his profession, and hardly compatible with its duties, was probably a

just one. But in settling in married life, Dr. Young carried a deference to the supposed feelings of the world towards those physicians who distinguished themselves in lines of research not obviously connected with their calling, to an excess which, in a man of his extraordinary talents and attainments, was certainly to be lamented, and possibly even with reference to those objects proposed to be compassed by it.

His resolution at that juncture was to confine himself for the most part to medical pursuits, and to make himself known to the public in no other character. But he had resolved on that which to him was impossible. He never slackened either in his literary or philosophical researches. He was always aiding, and always willing to be the counsellor of any one engaged in similar investigations. He was living in the first circles of London, amongst all who were most eminent. The nature of his habitual avocations was necessarily well known; and therefore in putting forth his non-medical papers, separately and anonymously, he was making a fruitless as well as voluntary sacrifice of the general celebrity to which he was entitled; and shrinking as it were from the cumulative reputation which he must otherwise have

enjoyed, he waived, in some degree, the advantage which is given by a great name towards the pursuit even of professional success.

In 1807 however, Dr. Young published his "Course of Lectures on Natural Philosophy and the Mechanical Arts," in two volumes quarto. This elaborate work he stated to have been the result of the unremitting application of five years; two having been given to the composition of the original lectures, and three more to the compilation of the mass of references in the second volume, to all those works to which the student might advantageously have recourse who wished to pursue any more minute enquiry; and to incorporating at the same time with the Lectures, as at first given, such results as might require insertion.

The booksellers engaged in this publication failed at the moment of its coming out, which greatly injured the immediate sale of the work; but it was a mine to which every one has since resorted, and contained the original hints of more things since claimed as discoveries, than can perhaps be found in a single production of any known author. For some years, indeed, it seemed hardly to have made its way to general use in England, but it was so appreciated by the phi-

losophers of the Continent, that one of the men most distinguished for science in Europe has been known to say, that if his library were on fire, and he could save only one book from the conflagration, it should be the Lectures of Dr. Young.

For sixteen successive years from the period of his marriage, Dr. Young passed his winters in London and his summers at Worthing, having been in 1810 appointed physician to St. George's Hospital. In his profession his published labours would prove him to have been of the most learned of scientific physicians, and his judgment and acuteness were equally great: but in the practice of medicine Dr. Young was not one of those who were likely to win the most extended occupation amongst the multitude. He was averse to some of the ordinary methods by which it is acquired. He never affected an assurance which he did not feel, and had perhaps rather a tendency to fear the injurious effects which might eventually result from the application of powerful remedies, than to any overweening confidence in their immediate efficacy. His treatises bear the same impress. That on Consumption, is a most striking instance of his assiduity in collecting all recorded facts, and his abstinence in drawing inferences from isolated

cases, or putting forth that which he did not feel was established with certainty. Possibly he herein was an example, that increase of knowledge does not tend to increase of confidence, and that those whose acquirements are the greatest, meet in the progress of their investigations with most that leads to distrust. However it might be, his practice, though respectable, was never very extensive.

Dr. Young afterwards published a "Syllabus of Lectures on the Elements of the Medical Sciences," as delivered by him at the Middlesex Hospital, and his "Introduction to Medical Literature, including a System of Practical Nosology" —the latter a work of great labour, forming like his Natural Philosophy, a text book of the highest practical utility, and accompanied by a mass of references, which, to industry and perseverance less than his, it should seem almost impossible to have accumulated.

The Lectures, like every thing which proceeded from Dr. Young, were, even in his own estimation, too full of matter and too much compressed to be conveniently followed by the hearer in a course of oral instruction. Indeed, in all things he was rather too apt to presume a knowledge in other persons which they did not possess, and consequently

to fail in his estimate of how much of explanation was needed in communicating the results of science to those who were comparatively ignorant. To the larger of these works he prefixed a "Preliminary Essay on the Study of Physic;" in which he gives a singular picture of what, in his opinion, is required to constitute a well-educated physician; enumerating nearly every possible quality of which man could wish, but of which few could hope, the attainment.

Dr. Young contributed to the Quarterly Review a variety of articles, literary and scientific. He first engaged, at the suggestion of Mr. George Ellis, one of his most intimate and most valued friends, to furnish those on medical subjects to that work. But his communications soon branched into other lines, many of them connected with the higher departments of science, and containing the results of some of his most laboured researches. The Review of Adelung's Mithridates, Vol. X. October 1813, is perhaps the most remarkable, not only from the immense knowledge it displays of the structure of almost all languages, but as having been the composition which first led him to the investigation of the lost literature of ancient Egypt.

In the year 1814, Sir William Rouse Boughton had brought with him from Egypt some fragments of Papyri, which he put into the hands of Dr. Young; the fragment of the Rosetta stone having been about this time deposited in the British Museum, and a correct copy of its three inscriptions having been engraved and circulated by the Society of Antiquaries. Dr. Young first proceeded to examine the enchorial inscription, and afterwards the sacred characters, and after a minute comparison of these documents, he was enabled to attach some "Remarks on Egyptian Papyri, and on the inscription of Rosetta," *containing an interpretation of the principal parts of both the Egyptian inscriptions on the pillar*, to a paper of Sir William Boughton's, which was published by the Society of Antiquaries in 1815, in the eighteenth volume of the Archæologia.

Dr Young now found he had discovered a key to the lost literature of ancient Egypt. He had occupied himself, though without deriving from it the asistance he had at first expected, in the study of the Coptic and Thebaic version of the Scriptures; but having satisfied himself of the nature and origin of the enchorial character, he produced the result to the world anonymously in the Museum

Criticum of Cambridge, part the sixth, published in 1815; being then determined to prosecute the discovery, but at the same time abstaining from claiming it in a more substantive form, from the resolution he had previously taken to be known only as a medical author.

The labour he bestowed on these investigations, and the minuteness and accuracy with which he copied the papyri, and compared the materials which came into his hands, would be nearly incredible to those who had not access to him whilst employed on this pursuit.

In 1816, he printed and circulated two additional Letters relating to his hieroglyphical discoveries, and the inscription of Rosetta; the first addressed to the Archduke John of Austria, who had recently been in this country, the other to M. Akerblad. These letters announce the progress of the discovery of the relation between the Egyptian characters and hieroglyphics, forming the basis on which Dr. Young continued his enquiries, as well as of the system afterwards carried further in its details by M. Champollion, whose attention had long been directed to similar studies, and in which he has since so greatly distinguished himself. The letters were *first pub-*

lished when *re-printed* in the seventh number of the Museum Criticum in 1821; and were, with the former letters in that work, beyond all question or dispute, the earliest announcement of the discovery of a key to a character which had remained uninterpreted for ages.

In the same year he agreed with Mr. M'Vey Napier to furnish various articles to the Supplement to the Encyclopædia Britannica, conducted under the superintendance of that gentleman; and in this work, under the head "EGYPT," he first brought out the whole results of his discoveries in a perfect and concentrated form.

To the Supplement of the Encyclopædia Britannica, Dr. Young furnished sixty-three articles, scientific, biographical, and literary; the signature by which they are marked, being two consecutive letters of the sentence "*Fortunam ex aliis.*" His adoption of such a motto appears to have been caused by his considering at this period of his life, that he had not succeeded to his wish or expectation in the profession which he had chosen, and that he had reason to complain of some injustice, in that the extent and utility of his labours in science, after having been fully appreciated by the philosophers of the Continent, had not appeared

to have met with the same acceptance amongst his own countrymen. But this feeling, as it was transitory, so it should seem that it was hardly well-founded. By those competent to form a judgment, he was known to stand at the head both of the letters and of the science of England; but from the time of his quitting the professorship of the Royal Institution, all his philosophical and literary tracts, with the exception of his Lectures and his communications to the Royal Society, were scattered through so many and such diverging channels of publication, as well as branched into such varied lines, that they never were within the reach of any one class of readers, nor ever in the aggregate came before the public as proceeding from him; to which may be added, that the slightest reference to his non-professional works will shew him, in these years, to have used expressions studiously to conceal himself.

Of Dr. Young's philosophical articles in the Supplement to the Encyclopædia Britannica, some of which contain the results of his most elaborate investigations, the writer of the present memoir is not competent to speak. Many of his biographical sketches are admirably given; but he would refer to the Life of PORSON, not only as being in

itself a most masterly production, but as containing a very interesting indication of some of Dr. Young's opinions, both on the value of classical studies, and on the mechanism of the human mind; and he would instance the dissertation on "LANGUAGES," as containing the stupendous collections he had made for the subject, when led to it by reviewing Adelung's Mithridates for the Quarterly Review.

Early in 1817, Dr. Young having occasion to visit a patient in Paris, was greatly pleased with his reception in the scientific circles of that metropolis. With the Baron Alexander Von Humboldt, Messrs. Arago, Cuvier, Biot, and Guy Lussac, he had made previous acquaintance in this country. He found himself happy in renewing his intercourse with these very eminent men, and after his return to London, he went back to Paris for a few weeks in the summer of the same year.

In 1818, he was appointed by a commission under the Privy Seal, together with Sir Joseph Banks, Sir George Clerk, Mr. Davies Gilbert, Dr. Woollaston, and Captain Kater, a commissioner for taking into consideration the state of the weights and measures employed throughout Great Britain. Dr. Young acted as secretary at the

meetings of this Board, and to the three Reports which were laid before Parliament he furnished both the scientific calculations, and the attached account of the various measures customarily in use. It seems right to state, that in pursuing these investigations it was his opinion, that however theoretically desirable it might be, that all weights and measures should be reducible to a common standard of scientific accuracy, yet that, practically, the least possible disturbance of that to which people had long been habituated was the point to be looked to, and on this ground he was extremely averse to unnecessary changes.

Towards the end of the year 1818, Dr. Young was appointed secretary to the Board of Longitude, with the charge of the supervision of the Nautical Almanack, under a new Act of Parliament brought in by Mr. Croker and Mr. Davies Gilbert; having in the first instance been nominated in the Act as one of the Commissioners, without his previous knowledge. This appointment was to him a very desirable one, though the labour in which it involved him was great, as his anxiety to increase his medical practice henceforth ceased, and it made that the business of his life which had always been his inclination.

He now discontinued his residence at Worthing, and devoted the summer to a hasty tour into Italy, an object which he always had in view. In about five months he visited all the most remarkable Italian cities, and amongst other objects of interest, gave the first place to the examination of the Egyptian monuments preserved in that country. He returned to England by Switzerland and the Rhine.

From the year 1820 to the end of his life, Dr. Young continued to furnish a variety of astronomical and nautical collections to Brande's Philosophical Journal, the greater part of which were original, and others which were translated were accompanied by his own comments.

In 1821, he published anonymously an "Elementary Illustration of the Celestial Mechanics of La Place, with some additions relating to the motion of Waves and of Sound, and to the cohesion of Fluids." This volume, and the article "Tides," in the Supplement to the Encyclopædia Britannica, were considered by him to have contained the most fortunate of the results of his mathematical labours. He proceeds in his own course and manner of investigation, and uses his own processes, and the great reach of mind displayed in these

works seems universally acknowledged; but whether he have sufficiently established all the points which he considered himself to have proved, remains matter of dispute amongst those best qualified to judge. They were spoken of in the highest terms of praise by Mr. Davies Gilbert from the Chair of the Royal Society; but there are some amongst the most distinguished of surviving English philosophers, who still think that his theory of the Tides rests too exclusively on analogies, and that many of the elements of the computation are too much out of human reach to render the boldness of the original thought susceptible of being subjected to the severity of mathematical deduction.

Dr. Young as a mathematician was of an elder school, and was possibly somewhat prejudiced against the system now obtaining, both amongst the continental and the English philosophers; as he thought the powers of intellect exercised by a preceding race of mathematicians, were in no small danger of being lost or weakened by the substitution of processes in their nature mechanical.

The next year he went again to Paris, and in 1823 he published his "Account of some recent

Discoveries in Hieroglyphical Literature and Egyptian Antiquities," in which he gave his own original alphabet, his translations from papyri, and the extensions which that alphabet had received from M. Champollion. This was the first non-professional publication since 1804, to which he had prefixed his name, and made open claim to his discoveries; having, as stated in his Preface, now attained his fiftieth year, and having at last determined to throw off the shackles by which he had hitherto considered himself to be bound by the etiquette of a medical practitioner.

At this time he attempted to form a society of about fifty subscribers, for the lithography of a collection of plates of Egyptian antiquities, subservient to the study of hieroglyphical literature. This work was, however, entirely carried on by Dr. Young, and was afterwards made over to the Royal Society of Literature, and continued during the remainder of his life, to be executed under his supervision.

In 1824, he made an excursion to Spa and to Holland; and on his return undertook the medical responsibility and mathematical direction of a society for life insurance. This was established at a moment when a mania for joint stock

companies was springing up in England, and which at the time was supposed to offer great pecuniary advantages; but Dr. Young's most scrupulous regard to what he supposed the strictest justice, never forsook him: he declined all participation in the speculation, and confined himself to the performance of the duties which he undertook. The connexion however with this company led him into new lines of research, in which he took great interest. He contributed to the Royal Society a "Formula for expressing the Decrement of Human Life," in a letter addressed to Sir Edward Hyde East, which was published in the Philosophical Transactions for 1826; and a "Practical Application of the Doctrine of Chances," to Brande's Philosophical Journal for October in the same year; whilst he had a singular satisfaction in witnessing the prosperity of the concern in the department under his direction.

The year before this he removed from Welbeck-street to a house which he had built in Park Square in the Regent's Park, where he continued to reside during the remainder of his life, and where, in a situation to which he was extremely attached, he led the life of a philosopher, surrounded by every domestic comfort, and enjoying

the pleasures of an extensive and cultivated society, who knew how to appreciate him. He expressed himself as having now attained all the main objects which he had looked forward to in life as the subject either of his hopes or his wishes. This end being, to use his own words, "the pursuit of such fame as he valued, or of such acquirements as he might think to deserve it."

In 1827, Dr. Young was elected one of the eight foreign members of the Royal Institute of France, and was much gratified, not only by the honour conferred, but by being associated with so many distinguished persons, with whom he had long been in habits of correspondence and of friendship.

His health had hitherto, with the exception of the consumptive tendency which had visited him in youth, been uninterrupted by a day's serious illness, and no person would have appeared as giving a promise of greater longevity; but in 1828 there was a perceptible diminution of strength. In that summer he went to Geneva, and appeared to suffer what was to him an unusual degree of fatigue on great bodily exertion, and his friends from that time could not help remarking symptoms of age which appeared to be on the increase, and which

contrasted strongly with the singular freedom from complaint which he had hitherto enjoyed.

During the time that Dr. Young was abroad, the general state of the finances of the country had been submitted to the examination of a Committee of the House of Commons. Amongst other things, some of the severer economists had brought under their consideration the construction and utility of the Board of Longitude as being under the direction of the Admiralty, and as giving an allowance of a hundred pounds a year to certain professors of the two universities, whose attendance was not often called for. The committee did not consist of members who were much acquainted with science; not one scientific person was examined before them. The amount of saving by the abolition of the only salaries which the government of England held forth for the encouragement of science, little if at all exceeded £500 a year; and though many projects which might not prove of utility were referred by Government to this Board, yet the sums actually expended through them on such as they might conceive to be useful, had been extremely limited. But on the recommendation of this committee a bill was passed abolishing the Board, at the same time permitting the Admiralty to retain the officer

entrusted with the calculations of the Nautical Almanack.

Dr. Young continued to execute these duties; but this singular, and as it should seem ill-advised proceeding, caused great heart-burnings and discontent in the scientific bodies, amongst those who considered themselves or their friends treated unhandsomely as well as illiberally, in the manner in which their services had been dispensed with; and the assistance of men of science was soon found to be so indispensable to many departments connected with the Admiralty, that a new council of three members, consisting of Dr. Young, Captain Sabine, and Mr. Farraday, was appointed for the performance of the duties which had before devolved upon the Board.

The discussions incident to this subject, and the various reports which Dr. Young had in consequence to draw up, together involved him in more labour than the situation of his health rendered him competent to perform without injury, and exacerbated a complaint which it afterwards appeared must have been long in progress, but which now was bringing him rapidly to a state of extreme debility.

He had from the month of February 1829, suf-

fered from what he considered repeated attacks of asthma, and though he said little of it, as unwilling to alarm those about him, was evidently uneasy at the situation of his health. This gradually deteriorated. He had in the beginning of April great difficulty in breathing, with some discharge of blood habitually from the lungs, and was in a state of great weakness. His friends and physicians, Doctors Nevinson and Chambers, considered that there was something extremely wrong in the action of the heart, as well as that the lungs were very seriously affected.

Though thus under the pressure of severe illness, nothing could be more striking than the entire calmness and composure of his mind, or could surpass the kindness of his affections to all around him. He said that he had completed all the works on which he was engaged, with the exception of the rudiments of an Egyptian Dictionary, which he had brought near to its completion, and which he was extremely anxious to be able to finish. It was then in the hands of the lithographers, and he not only continued to give directions concerning it, but laboured at it with a pencil when, confined to his bed, he was unable to hold a pen. To a friend who ex

postulated with him on the danger of fatiguing himself, he replied it was no fatigue, but a great amusement to him; that it was a work which if he should live it would be a satisfaction to him to have finished, but that if it were otherwise, which seemed most probable, as he had never witnessed a complaint which appeared to make more rapid progress, it would still be a great satisfaction to him never to have spent an idle day in his life.

His last anxiety concerning the proceedings of one or two persons who had made him the object of reiterated attacks, in consequence of being dissatisfied with the arrangements of the Nautical Almanack, was, that nothing should go forth on his part to increase irritation, and when papers were sent him which went to enumerate and to prove the errors, into which these individuals had fallen, his desire was that they should be suppressed.

In the very last stage of his complaint, in the last lengthened interview with the writer of the present memoir, his perfect self-possession was displayed in the most remarkable manner. After some information concerning his affairs, and some instructions concerning the hieroglyphical papers in his hands, he said that, perfectly aware of his situation,

he had taken the sacraments of the church on the day preceding; that whether he should ever partially recover, or whether he were rapidly taken off, he could patiently and contentedly await the issue: that he thought he had exerted his faculties through life as far as they were capable of, but that for the last eight years he had been careful of straining them to more than he thought they could compass without injury; that he had settled all his concerns; that if his health had been continued to him, he might have looked forward to the prolongation of much that was to be enjoyed; but that though he was in no other suffering than that of great oppression and weakness, still that if life were continued in the state he then was of inability to any of his accustomed employments, he could hardly wish it to be long protracted.

His illness continued with some slight variations, but he was gradually sinking into greater and greater weakness till the morning of the 10th of May, when he expired without a struggle, having hardly completed his fifty-sixth year. The disease proved to be an ossification of the äorta, which must have been in progress for many years, and every appearance indicated an advance of age, not brought on probably by the natural courses of time,

nor even by constitutional formation, but by unwearied and incessant labour of the mind from the earliest days of infancy. His remains were deposited in the vault of his wife's family, in the Church of Farnborough in Kent.

To delineate adequately the character of Dr. Young would require an ability in some proportion to his own, and must be ill supplied by one incompetent to judge of the talents of a man, who as a physician, a linguist, an antiquary, a mathematician, scholar, and philosopher, in their most difficult and abstruse investigations, has added to almost every department of human knowledge that which will be remembered to aftertimes—"who," as was justly observed by Mr. Davies Gilbert, in his eloquent address to the Royal Society, over which he so worthily presided, "came into the world with a confidence in his own talents growing out of an expectation of excellence entertained in common by all his friends, which expectation was more than realized in the progress of his future life. The multiplied objects which he pursued were carried to such an extent, that each might have been supposed to have exclusively occupied the full powers of his mind; knowledge in the abstract, the most enlarged generalizations,

and the most minute and intricate details, were equally affected by him; but he had most pleasure in that which appeared to be most difficult of investigation." The president added, that "the example is only to be followed by those of equal capacity and equal perseverance; and rather recommends the concentration of research within the limits of some defined portion of science, than the endeavour to embrace the whole."

Dr. Young's opinion was, that it was probably most advantageous to mankind, that the researches of some inquirers should be concentrated within a given compass, but that others should pass more rapidly through a wider range—that the faculties of the mind were more exercised, and probably rendered stronger, by going beyond the rudiments, and overcoming the great elementary difficulties, of a variety of studies, than by employing the same number of hours in any one pursuit—that the doctrine of the division of labour, however applicable to material product, was not so to intellect, and that it went to reduce the dignity of man in the scale of rational existences. He thought it so impossible to foresee the capabilities of improvement in any science, so much of accident having led to the most important discoveries,

that no man could say what might be the comparative advantage of any one study rather than of another; and though he would scarcely have recommended the plan of his own as the model of those of others, he still was satisfied in the course which he had pursued.

It has been said, that the powers of imagination were the only ones of which he was destitute. From the highly poetical cast of some of his early Greek translations, this is at least doubtful. It might, perhaps, have been said more justly, that he never cultivated the talent of throwing a brilliancy on objects which he had not ascertained to belong to them. Dr. Young was emphatically a man of truth. The truth, the whole truth, and nothing but the truth, was the end at which he aimed in all his investigations, and he could not bear, in the most common conversation, the slightest degree of exaggeration, or even of colouring. Now, all exercise of what is ordinarily called imagination, is the figuring forth something which, either in kind or in degree, is not in truth existent; and whether originally gifted with this faculty, or otherwise, Dr. Young would, on principle, have abstained from its indulgence.

To sum up the whole with that which passes

all acquirement, Dr. Young was a man in all the relations of life, upright, kind-hearted, blameless. His domestic virtues were as exemplary as his talents were great. He was entirely free from either envy or jealousy, and the assistance which he gave to others engaged in the same lines of research with himself, was constant and unbounded. His morality through life had been pure, though unostentatious. His religious sentiments were by himself stated to be liberal, though orthodox. He had extensively studied the Scriptures, of which the precepts were deeply impressed upon his mind from his earliest years; and he evidenced the faith which he professed, in an unbending course of usefulness and rectitude.

A

CATALOGUE

OF THE

WORKS AND ESSAYS

OF THE LATE

DR. YOUNG.

(Found in his own Hand-Writing, to 1827.)

A

CATALOGUE,

&c.

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1. A short Note on Gum Ladanum, with a verbal Criticism on Longinus, signed with his initials, and inserted in the Monthly Review for 1791, seems to have been his first appearance before the Public. The criticism was admitted by Dr. Burney to be correct.

2. In the Gentleman's Magazine for April 1792, Observations on the Manufacture of Iron: an attempt to remove some objections to Dr. Crawford's theory of Heat, which had been advanced by Dr. Beddoes.

3. Entomological Remarks; Gentleman's Magazine, December 1792: on the habits of Spiders; on a passage of Aristotle, with an illustration of the Fabrician System; and a plate of the mouth of an insect.

4. Observations on Vision: Philosophical Transactions, 1793, p. 169, explaining the accommodation of the Eye, from a muscular power in the crystalline lens—a theory not altogether new, but immediately afterwards claimed by John Hunter, as a discovery of his own.

5. Contributions to Hodgkin's Calligraphia Græca, 4to. London, 1794; including Lear's Curses in Iambics.

6. Description of an Opercularia. Linnæan Transactions, Vol. III. p. 30. London 1797: read in 1794. The Opercularia,

Aspera of Gaertner, called by Persoon, Cryptospermum Youngii, from the name here suggested.

7. Some Notes and an Epigram, in Dalzel's Collectanea Græca, 8vo. Edinburgh, 1795.

8. De Corporis Humani viribus conservatricibus, Dissertatio, 8vo. Gottingen, 1796: an Inaugural Dissertation, collected from a multiplicity of authors.

9. Translation of Lichtenstein on the Genus Mantis. Linnæan Transactions, Vol. VI. p. 1.: read in 1797.

10. The Leptologist. British Magazine, 1800: a series of Essays on Grammar, Criticism, Geometry, Paintings, Manners, Riches, Exercises, Medicine, and Music; some of them reprinted afterwards.

11, 12. There is also an account of the French Calendar and Measures, and an Essay on the Morals of the Germans.

13. Experiments and Enquiries respecting Sound and Light. Philosophical Transactions, 1800, p. 106: the vibrations of the air observed by means of smoke; those of strings counted, and their orbits observed with a microscope; their harmonics suppressed at pleasure.

14. A Bakerian Lecture on the Mechanism of the Eye. Philosophical Transactions, 1801, p. 23: describing a new Optometer, and shewing that the eye retains its power of accommodation under water; measuring also the dispersive power of the eye. (Dr. Y. remarks, that he "afterwards found that his own eye lost almost the whole of its power of accommodation soon after fifty, remaining fixed at its greatest focal distance.")

15. A Letter respecting Sound and Light. Nicholson's Journal, August 1801, in answer to Professor Robison, of Edinburgh.

16. A Syllabus of a Course of Lectures on Natural and Experimental Philosophy; 8vo. London, 1802: presenting a Mathematical Demonstration of the most important Theorems in Mechanics and in Optics; and containing the first publication of the general law of the INTERFERENCE OF LIGHT, which has been considered as the happiest result of all the Author's efforts. It was not till the year 1827, that the importance of this law could be said to be fully admitted in England: it was in that year that the Council of the Royal Society adjudged Count Rumford's Medal to M. Fresnel, for having applied it, with some modifications, to the most intricate phenomena of polarized light.

17. A Bakerian Lecture on the Theory of Light and Colours; Phil. Trans. 1802, p. 12, developing the law of Interference, and entering into all the details of the theory to which it leads; dwelling, at the same time, upon the difficult points, with somewhat more of candour than might have been consistent with his object, had he been anxious to obtain proselytes.

18. An Account of some Cases of the Production of Colours, p. 387, containing a simpler statement of some applications of the same law, intended to exhibit the facts in a more concentrated form.

19. A Reply to Mr. Gough's Remarks. Nicholson, November 1802, p. 1. This Letter, together with some subsequent Correspondence, relates principally to the coalescence or composition of Sounds, affording an analogy to the interference of Light.

20. Journals of the Royal Institution, 8vo. London, 1802-3. A first volume, and part of a second, were edited, and chiefly written, by Dr. Young.

21. Experiments and Calculations relative to Physical Optics. Phil. Trans. 1804, p. 1. Another Bakerian Lecture, continuing the demonstration and the application of the law of Interference.

22. A Reply to the Animadversions of the Edinburgh Reviewers, 8vo. 1804:—a defence of the Papers printed in the Transactions against two articles supposed to have been written by Mr. Brougham.

23. To an Imperial Review, which was an unsuccessful speculation of some booksellers in 1804, he contributed several medical and some other miscellaneous articles. The works that he reviewed were, *Dumas Phisiologie*, Darwin's Temple of Nature, Blackburn on Scarlet Fever, Percival's Medical Ethics, Fothergill's Tic Douloureux, Crichton's Table, Nisbet's Watering Places, Rowley on Madness, *Hutton's Ozanum*, Buchan on Sea-Bathing, *Robison's Astronomy*, Winterbottom's Sierra Leone, Macgregor's Medical Sketches, Wilson's Philosophy of Physic, Richerand's Physiology, and Joyce's Scientific Dialogues.

24. An Essay on the Cohesion of Fluids. Phil. Trans. 1805, p. 71, containing many of the results which were published as new, about a year afterwards, by La Place. The mathematical reasoning, for want of mathematical symbols, was not understood, even by tolerable mathematicians; from a dislike of the affectation of algebraical formality, which he had observed in some foreign authors, he was led into something like an affectation of simplicity, which was equally inconvenient to a scientific reader.

25. A Course of Lectures on Natural Philosophy and the Mechanical Arts; two volumes, 4to. London, 1807. This elaborate work was the result of the unremitting application of five years; two, whilst the Author was engaged in giving the Lectures at the Royal Institution, and three more in compiling the mass of references contained in the second volume, and in incorporating their results, when requisite, with the text of the first. By means of numerous plates, and by indexes of various kinds, he had endeavoured to render the book as convenient for occasional reference, as it was correct for the purposes of methodical study. (The failure of the Booksellers who pub-

lished this work, at the moment of its appearance, so greatly injured its sale at the time, that it did not repay the expenses of the publication; and Dr. Young considered that his labours were first generally appreciated by the Natural Philosophers of the Continent.)

26. Remarks on Looming, or Horizontal Refraction. Nicholson, July 1807, p. 153, supplying some deficiencies in Dr. Wollaston's Theory, particularly with regard tothe occurrence of actual Reflection.

27. A Table of Chances, with remarks on Waves. Nicholson, Oct. 1807, p. 116.

28. A Theory of Covered Ways and Arches. Nicholson, Dec. 1807, p. 24.

29. Remarks on a Pamphlet of Professor Vince. Nicholson, April 1808, p. 304; pointing out the mathematical fallacy of the Professor's supposed refutation of the hypothesis of Newton respecting the cause of Gravitation.

30. Calculation of the rate of Expansion of a supposed Lunar Atmosphere. Nicholson, June 1808, p. 117.

31. Determination of the Figure of a gravitating Body. Nicholson, June 1808, p. 208.

32. Calculation of the Attraction of a Spheroid. Nicholson, August 1808, p. 273.

33. A Review of Sinclair on Longevity. British Critic.

34. Abstracts and Criticisms in the "Retrospect," about 1808 and 1809.

35. Hydraulic Investigations. Phil. Trans. 1808, p. 164; principally subservient to an intended Croonian Lecture.

36. A Syllabus of a Course of Lectures on the Elements of the Medical Sciences; 8vo. London, 1809. These Lectures were delivered for two seasons at the Middlesex

Hospital. (Dr. Young remarks, that "they were little frequented, on account of the usual miscalculation of the Lecturer, who gave his audience more information in a given time, than it was in their power to follow.")

37. Computation of the Depression of Mercury in the Barometer. Nich. March 1809, p. 215. Continuation of the Paper on the Cohesion of Fluids, Oct. p. 81.

38. Remarks on the Friction of Wheels, in Buchanan's Essay on Wheel-work, 8vo. Glasgow, 1809.

39. A Croonian Lecture on the Heart and Arteries. Phil. Trans. 1809, p. 1: attempting to demonstrate, on Mathematical principles, that the larger arteries can have little or no concern in propelling the blood by their active muscular powers.

40. A Numerical Table of Elective Attractions. Phil. Trans. 1809, p. 148: with remarks on the sequences of double decompositions, shewing that if numerical expressions of electric attractions are possible, their effects in double decompositions may be compendiously expressed by tables of sequences only.

41. A Memoria Technica for Elective Attractions, in a few Latin hexameters. Nich. April, 1809.

42. Account of the Pharmacopeia Londinensis, in Cumberland's London Review, 1810.

43. To the earlier Volumes of the *Quarterly Review* he contributed a variety of Articles, which frequently, according to the custom of modern times, contained more of original research than of immediate criticism. To Vol. I. La Place, Action Capillaire. Vol. II. Haslam, Pinel, Cox, and Arnold, on Insanity; La Place, Refraction Extraordinaire. Vol. III. *Herculanensia*; Jones on the Gout; *Memoires d'Arcueil.* Vol. VI. Cuthbert on the Tides. Vol. VIII. Davy's Chemical Philosophy. Vol. IX. Blackall on Dropsies. Vol. X. ADELUNG'S MITHRIDATES; Göthe on Colours. Vol. XI. *Malus, Biot,*

Seebeck, and Brewster, on Light; Bancroft on Dying; Davy's Agricultural Chemistry; Adams on Ectropium. Vol. XIII. *Wells on Dew.* Vol. XIV. Jamieson and Townsend on Languages; Pym and Fellowes on Yellow Fever, an article printed, but not published in the Work. Vol. XIX. p. 411. *Restoration and Translation of the Inscription on the Sphynx.*

44. Berzelius on Definite Proportions, from the German, appeared in several successive numbers of the Philosophical Magazine, from January 1813 to April 1814.

45. A Theory of the Tides. Nicholson, July—Aug. 1813.

46. AN INTRODUCTION TO MEDICAL LITERATURE, INCLUDING A SYSTEM OF PRACTICAL NOSOLOGY, 8vo. London, 1813: a work of considerable labour, though far less arduous than the "Natural Philosophy." The Appendix contains an abstract of Berzelius's Animal Chemistry, from the Swedish. To a second edition, published in 1828, were added the References to later Journals, and an Essay on Palpitations, which first appeared in the fifth Volume of the Medical Transactions of the College of London.

47. Remarks on the Employment of Oblique Riders, and on other Alterations in the construction of Ships. Phil. Trans. 1814, p. 303; the substance of a Report before presented to the Board of Admiralty, relating to Sir Robert Sepping's Improvements, with some additional illustrations.

48. An Investigation of the Thrust of soft Substances. Hutton's Mathematical Dictionary, Edition 2, 1815. Article, Pressure.

49. A PRACTICAL AND HISTORICAL TREATISE ON CONSUMPTIVE DISEASES: 8vo. London, 1815; being a condensed abstract of every thing recorded to have been said or done, with regard to Consumption. Particular circumstances had pressed the publication of this Work within nine months after it had been commenced.

50. In the eighteenth Volume of the Archæologia, London, 1815, appeared some *Remarks on Egyptian Papyri*, and on the INSCRIPTION OF ROSETTA, annexed to a communication made by Sir William Edward Rouse Boughton, Bart. They contain an interpretation of the principal parts of both the Egyptian Inscriptions on the Pillar found at Rosetta, AND CONSEQUENTLY A KEY TO THE LOST LITERATURE OF ANCIENT EGYPT; though, for professional reasons, the discovery was made public with as little parade as possible.

51. Extracts of Letters and Papers relating to the Egyptian Inscription of Rosetta, in the Museum Criticum of Cambridge, Part VI. 8vo. 1815; a Correspondence with MM. Silvestre de Sacy, and Akerblad.

52. An Investigation of the Pressure sustained by the fixed supports of flexible Substances. Phil. Mag. Sep. 1813, applied to the Hoops of Casks, and to Dock Gates.

53. An Algebraical Expression of the Values of Lives. Phil. Mag. Jan. 1816, with a Diagram.

54. Account of some Thebaic Manuscripts, written on leather. Legh's Narrative, 4to. London, 1816.

55. Additional Letters relating to the Inscription of Rosetta; the first addressed to the Archduke John, who had lately been in England; the second to M. Akerblad, Museum Criticum VII. *The Letters were printed and distributed in* 1816; *the Journal was not published till* 1821. THEY ANNOUNCE THE DISCOVERY OF THE RELATION BETWEEN THE DIFFERENT KINDS OF EGYPTIAN LETTERS, OR CHARACTERS—the basis on which the system of M. Champollion was afterwards erected.

56. Letters of Canova, and two Memoirs of Visconti, translated from the French and Italian. 8vo. London. 1816. A volume of 200 pages, which was completed in twelve days; together with remarks on an error of Delambre, which was afterwards confuted more at large by Mr. Cadell.

57. It was in 1816, that Dr. Young complied with an application made to him by Mr. M'Vey Napier, to write some articles for a Supplement to the Encyclopædia Britannica, conducted under the superintendence of that gentleman, and completed in 1825.

The Articles which he furnished were: Atwood—Addendum to Annuities — Bathing — G. Beccaria—Bloch — Borda —Boulton—Bramah—BRIDGE—Brisson —Bryant —Camus — *Notes* on Carpentry—Cavallo—*Cavendish*—*Chromatics*—Cohesion—Condamine—Coulamb—Dolland—Dolomieu— Duhamel —EGYPT—Fermat—Fluents—F. Fontana—G. Fontana—J. R. Forster—J. G. A. Forster—Fourcroy—Frisi—Guyton de Morveau— Herculaneum— Hydraulics— Ingehousz— Lagrange — La Lande—Lambert—LANGUAGES—Lemmonier—Luc—Malus —Maskelyne—Mason—Mechain—Messier—Orme — Pallas— Pauw—PORSON—Preservers of Life— Road-making — *Robison* —Rush—*Steam-Engine*—Tennant—Thomson—Count Rumford —TIDES— Tooke— Wakefield— Watson— Weights and Measures—Polarization by Arago, translated, with *Notes*. In all, about sixty-three articles, each marked with two different letters. (These were two consecutive letters of the sentence "*Fortunam ex aliis*;" the *u* in *fortunam* being sometimes printed as a *v*.)

58. Remarks on some Theorems relating to the Pendulum. Phil. Trans. 1818, p. 95, in a Letter to Captain Kater.

59. Translation of some Greek Inscriptions. Light's Travels. 4to. London, 1818.

60. Specimen of a Greek Manuscript in the possession of the Earl of Mountmorris, 1819. Archæologia, vol. XIX. This may possibly have been a pawnbroker's account: another piece nearly resembling it was sent by Mr. Salt to the British Museum.

61. Remarks on the Probabilities of Error in Physical Experiments, and on the Density of the Earth, considered espe-

cially with regard to the reduction of Experiments on the Pendulum. Phil. Trans. 1819, p. 70, computing the density of the earth, upon the supposition of the compression of a homogeneous elastic substance only.

62. Dr. Young edited the Nautical Almanac, from the year 1819, for the remainder of his life.

63. Remarks on Laplace's latest Computation of the Density and Figure of the Earth. Brande's Journal, April 1820; determining the Ellipticity, on the supposition of a compressed elastic substance.

64. Dr. Young furnished quarterly, for many years, to Brande's Philosophical Journal, about twenty pages of Astronomical and Nautical Collections, beginning in 1820; the greater part either original or translated by himself.

65. Appendix to the second edition of Belzoni's Travels, 4to. London, 1821.

66. Elementary Illustration of the Celestial Mechanics of Laplace, 8vo. London, 1821; with some additions relating to the motions of Waves, and of Sound, and to the cohesion of Fluids. (This volume, and the article "Tides," in the Supplement to the Encyclopædia Britannica, Dr. Young considered as together containing the most fortunate of the results of his mathematical labours.)

67. An Account of some recent Discoveries in Hieroglyphical Literature and Egyptian Antiquities, including the author's original Alphabet, as extended by M. Champollion, 8vo. London, 1823; with a translation of some Greek Manuscripts on Papyrus, the most remarkable of which was Mr. Grey's "Antigraph" of an Egyptian original then lying on his table; the discovery of which singular coincidence was the immediate cause of the publication of the volume.

68. Hieroglyphics, collected by the Egyptian Society, folio. London, 1823—a collection of Plates of Egyptian Antiquities

subservient to the study of Hieroglyphical Literature, lithographized at the expense of about fifty subscribers, but not at that time publicly sold. The second number, plates 16 to 40, contains nearly all that was known of the interpretation of the Hieroglyphics, the evidence for each word being exhibited in a comparative Index.

(This work was entirely carried on by Dr. Young; but the subscriptions not being adequate to the expenses, it was afterwards made over to the Royal Society of Literature, he undertaking to continue the supervision as before.)

69. A finite and exact Expression for the Refraction of an Atmosphere nearly resembling that of the Earth. Phil. Trans. 1824, p. 159; a computation derived from an optical hypothesis not exactly agreeing with the probable height of the physical atmosphere, but affording correct results.

70. Remarks on Spohn and Seyffarth. Brande's Phil. Journal, Oct. 1826, in a Letter addressed to the Baron William Von Humboldt.

71. A Formula for expressing the Decrement of Human Life; in a Letter addressed to Sir Edward Hyde East, Bart. Phil. Trans. 1826, intended to render the interpolation from the best observations more regular: it is followed by a correction of Dr. Price's mistake, respecting the periodical payments of annuities.

72. Practical Application of the Doctrine of Chances, as it regards the subdivision of Risks. Brande's Phil. Journ. Oct. 1826; shewing the Limitations under which Speculations on Probabilities may be conducted with prudence.

73. Remarks on Mr. Peyron's Account of the Egyptian Papyrus. Brande's Phil. Journ. Jan. 1827—the great Greek Papyrus of Turin: in which Mr. Grey's three contracts are cited and explained,—not two of them only, as had been supposed by Mr. Peyron.

The following Articles, of a later date than those contained in the above Catalogue, are known to have been written by Dr. Young.

74. Hieroglyphical Fragments. Brande's Philosophical Journal, April—June, 1827.——Hieroglyphical Fragments; with some Remarks on English Grammar: in a Letter to Baron William Von Humboldt. Brande's Phil. Journal, July—September, 1827.——Hieroglyphical Fragments, illustrative of Inscriptions preserved in the British Museum; with some Remarks on M. Champollion's Opinions: in a Letter to the Cavalier San Quintino. Brande's Phil. Journal, October—December, 1827. ——Hieroglyphical Fragments. Brande's Phil. Journal, January—March, 1828.

75. A Letter to M. Arago, relating to M. Champollion's Discoveries: dated, Geneva, July 1828. Inserted in the Classical Journal, No. 75.

76. Comparison of different Tables of Mortality. Brande's Phil. Journal, December 1828.

77. Letter to Mr. Bailey, April 1829.

78. A Translation of Fresnel's Elementary View of the Undulatory Theory of Light. In various Numbers of Brande's Phil. Journal; commenced in January 1827, and concluded in April 1829.

79. Dr. Young left also—Rudiments of an Egyptian Dictionary in the ancient Enchorial Character; containing all the Words of which the Sense has been ascertained. Intended as an Appendix to Mr. Tattam's Coptic Grammar.

(This Work was under the hands of the Lithographer at the time of his death.)

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